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NEBC MEETING NEWS

June 2001. The June "away" meeting was held at Bennington College in Bennington, Vermont. Paul Somers introduced the evening's speaker, Dr. Kerry Woods of Bennington College, whose topic was "The imagined forest: Stability and change in old-growth hemlock–northern hardwoods." The current concept of "old-growth forest" that controls conservation policy in the northeast is of a stable, old, undisturbed forest dominated by endogenous factors—processes internal to the community. However, we have no measurable or observable property that serves as an indicator that a community is "old growth" according to this definition. Kerry contends that our definition of "old-growth forest" and its dynamics is based on unverified models and untested assumptions—and that "old growth" really is only an imaginary forest.

To determine the actual dynamics of old forest communities, Kerry is studying two forests in northern Michigan that appear to have been free of major disturbance for at least 500 years. His study at both sites compares modern forest composition with data from plots established in 1962 (the Huron Mountain site) and 1935 (the Dukes Forest site). His data show that, at both sites, sugar maple is increasing; hemlock stable or increasing; birch significantly decreasing; and beech (which only arrived at the Dukes Forest site about 500 years ago—first generation trees are still standing) significantly increasing. Birch appears to have become established following some historic disturbance around 250 years ago, and is now not replacing itself. Beech has an age-distribution curve skewed to young trees. At the Dukes Forest site, the basal area of beech has increased by 2 to 4 times since the initial data collection 60 years ago.

The data show that these old forests are in fact not stable communities, but are undergoing slow successional changes in response to historic exogenous disturbance events. Community composition is still changing in response to events that occurred more than 200 years ago! Kerry's model predicts that a steady state, if ever reached, would be dominated by hemlock and beech, but that this state would be reached very slowly since hemlock requires 2 to 3 generations (1000 to 2000 years) to reach dominance. Kerry concluded that the current old-growth forest concept is not supported by this research, and suggested that forest con-

servation policy should be revised to reflect the actual, if slow, dynamics of old hemlock–northern hardwoods forests.

—Lisa A. Standley, Recording Secretary *pro tempore*.

June 2001 Field Trips. Fifteen members and guests met at 2 pm on a hot Friday afternoon, June 8, to explore the area in Pownal, Vermont, known as Krigger Rocks, with Dr. Kerry Woods as leader. Starting at Rt. 346, a peculiar rush, later identified as *Juncus compressus*, was found thriving in the salted road shoulder. Climbing gently up an old quarry access road, President Lisa Standley pointed out reed-like sedge, *Carex sparganioides*. The group fanned out upon entering the quarry proper, with various members pointing out plants of interest, most of them calciphiles and many of them rare in Vermont. Such plants as *Asplenium ruta-muraria*, *Cystopteris tenuis*, *Carex aurea*, *C. eburnea*, *Arabis lyrata*, *Rhus aromatica*, *Cornus rugosa*, and *Campanula rotundifolia* were seen around the quarry edges. On quarry spoil were fine plants of the native *Celastrus scandens* in full flower, a treat for those used to seeing only the increasingly invasive alien, *C. orbiculatus*. *Potentilla arguta*, *Penstemon hirsutus*, and *Quercus muhlenbergii* were noted here as well. The dry limestone woodlands above the quarry yielded *Asclepias quadrifolia* (in fine bloom), *Aureolaria flava* (young foliage only), and *Conopholis americana*. These were mixed with the usual and common members of the local flora such as *Carex pensylvanica*, *Hepatica americana*, and *Solidago caesia*. After two hours of relaxed botanizing, members strolled back to their cars and headed for well-deserved cooling refreshments, a quick cleanup, and supper.

On Saturday June 9, 12 Club members ventured out of New England into the wilds of New York. Led by Kerry Woods, the group explored the ledges and ravines of The Notch, in White Creek, New York (Washington County). The forests and ledges on the east side of the valley support a very rich herbaceous flora that includes *Laportea*, *Hepatica*, *Dentaria*, *Hydrophyllum*, *Dicentra*, *Allium*, *Caulophyllum*, *Claytonia*, violets, and other forbs. The fern flora is equally rich, with Goldie's fern in abundance, along with *Deparia acrostichoides* and *Diplazium pycnocarpon*. The forests and ledges on the west side of the valley are drier, with a chestnut oak (*Quercus montana*) woods at the summit and

surprising hemlock–yellow birch swamps in depressions on the ridge. In perfect weather, the group enjoyed the ledge scrambles, fresh black bear tracks, and wonderful views extending from Mount Greylock to Dorset.

—ARTHUR V. GILMAN, Field Trip Chair.

September 2001. The September "away" meeting was held at the Waquoit Bay National Estuarine Research Reserve in Falmouth, Massachusetts. Vice President Paul Somers introduced the evening's speakers, Dr. Richard Backus and Pamela Polloni, our hosts from the Botanical Club of Cape Cod and the Islands (BCCCI). Dr. Backus, Curator Emeritus of the herbarium at the Marine Biological Laboratory (MBL), specialized in ichthyology throughout much of his career and retired as Senior Scientist of the Woods Hole Oceanographic Institution. Since his retirement he has been working on the flora of Falmouth, Massachusetts. Pam, Acting Curator of the MBL herbarium, is a consulting botanist with the Massachusetts Natural Heritage and Endangered Species Program. Their topic was "The Floral History of Penikese Island."

Penikese is a 75-acre island in the Elizabeth Islands chain off Cape Cod, owned by the Massachusetts Division of Fisheries and Wildlife. Currently, it is occupied by the Penikese Island School for troubled boys, as well as a large nesting colony of gulls and terns and one of the state's two nesting colonies of Leach's storm petrels. In the 1800s, sheep, turkeys, and rabbits were raised on the island, and it housed the short-lived Anderson School of Natural History, founded by Louis Agassiz in 1873.

One of the first persons to describe Penikese Island was Gosnold, following his expedition of 1602. He described the island as being covered with cedars, some of which were cut by members of his party. David Starr Jordan, later president of Stanford University, wrote the first flora of Penikese in 1873, and described the island as "absolutely treeless and nearly shrubless . . . about as barren looking a pile of rock and stone as one could well imagine." Nonetheless, Jordan recorded 114 species of vascular plants. Subsequent floristic surveys were undertaken in 1923, 1947 (149 species), and 1973 (160 species). The current study is based on field work conducted in 1998 and 1999. The flora currently stands at 219 species, of which 47% are aliens.

The principal change in the flora of Penikese appears to be the increasing diversity and dominance of shrubs and vines since the cessation of grazing; nine new species became established on the island in the 50 years between 1923 and 1973. Interestingly, the first record of poison ivy was in 1947, and red cedar was first observed to return to the island in 1999. Currently, 80–90% of the island is covered by woody shrubs and vines but there are no ericads or grapes on the entire island. Other interesting observations made by the team include the loss over time of fern diversity. Hay-scented fern was a dominant species in 1923 and is currently restricted to a single plant. Marsh fern, once abundant around the ephemeral ponds, had disappeared by 1960.

The current floristic survey has revealed many possibilities for further study, particularly in the realm of disturbance and ecological succession. Dr. Backus predicts, in the absence of disturbance, an eventual return to the red cedar landscape recorded by Gosnold. The presenters suggest controlled burns for managing aggressive shrubs and woody vines and for encouraging native grasses, which might also improve nesting sites for seabirds.

September 2001 Field Trips. About 20 Club members and friends participated in a Friday afternoon tour of Crane Wildlife Management Area (Crane WMA) and Waquoit Bay National Estuarine Research Reserve (Waquoit Bay NERR) in Falmouth. Paul Somers, Maile Neel, and Pamela Polloni interpreted research being conducted on habitat restoration for *Agalinis acuta*, the federally endangered sandplain gerardia. Starting at Crane WMA, the group examined flowering and fruiting plants of *A. acuta* in and adjacent to plots established in December 1997. The 1998 results showed that grassland plots prepared for seed sowing by burning of thatch, soil scarification and removal of thatch, or burning followed by soil scarification each produced significantly more *A. acuta* plants than control plots. Maintenance of the experimental area by spring mowing in 1999 and 2000, and burning in 2001, has resulted in a gradually increasing and spreading population. Two highlights of the botanical exploring in the area were the discovery of a new colony of *Agalinis* to the north of the experimental area and a healthy population of *Scleria pauciflora* var. *caroliniana*, a state-listed rare species not previously known from Crane WMA. At Waquoit Bay NERR, a series of smaller experimental plots that preceded the Crane WMA plots were ex-

amined and discussed. These research plots tested seed banking and management by burning, scarification, and mowing on a smaller scale. The seed bank plots have revealed that *A. acuta* can seedbank for at least four years. At Waquoit, Maile Neel discussed pollination studies she initiated there in 2000. Her study, using bagged flower buds, has demonstrated that *A. acuta* is capable of a very high level of selfing but that seed set is typically lower than when cross pollination occurs. Today a population with over 30,000 plants is being maintained by winter and spring mowing at the experimental site. The group also visited a neighboring cemetery where a portion is being managed for sandplain gerardia.

On a beautiful, early fall Saturday morning, 20 Club members toured the Mary Dunn coastal plain pond complex in Hyannis, led by BCCCI member and founding president, Mario DiGregorio. Mario and the Nature Conservancy hydrologist Rich McHorney provided a history of the botanical exploration of the ponds and an explanation of their unique hydrology. The group foraged around the pond edges and was rewarded with *Coreopsis rosea, Drosera filiformis, Eleocharis melanocarpa, E. robbinsii, Lachnanthes caroliniana* in fruit, *Panicum wrightianum, Polygala cruciata, Rhynchospora macrostachya, Scleria*, and *Stachys hyssopifolia.* One late-blooming *Sabatia kennedyana* was found. After lunch, current BCCCI president Don Schall led 12 botanists on a walk at Sandy Neck beach in Barnstable. The interdunal swales contained small cranberry-dominated wetlands with *D. filiformis, Euthamia tenuifolia, Pogonia ophioglossoides*, and *Lycopodium appressum* present, and with *Carex silicea* at the fringes. The nearby salt marsh was distinguished by *Pluchea* in full bloom, *Scirpus robustus*, and *Aster subulatus.* Several handsome specimens of *Panicum amarum* were found near the marsh edge.

—Lisa A. Standley and Paul Somers, Recording Secretaries *pro tempore.*